

A CONTRIBUTION TO THE TAXONOMY,
DISTRIBUTION AND BIOLOGY OF THE
VAGRANT ANT, *PLAGIOLEPIS ALLUAUDI* EMERY
(HYMENOPTERA, FORMICIDAE)

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About 1946 a small, yellow *Plagiolepis* was intercepted by Plant Quarantine Inspectors of the U. S. Department of Agriculture on such plants as gladiolus, croton, poinsettia, daisy, hibiscus, bryophyllum, pampas grass and Surinam cherry from the Bermuda Islands. At that time only a generic identification was made, although it was recognized that the ant was an introduction from the Old World. *Plagiolepis* is native only to the Old World. Furthermore, although species of *Plagiolepis* have been spread by commerce over various parts of the world, so far as I am aware none has been correctly reported from the New World. *Plagiolepis flavidula* Roger (1863, Berlin Ent. Ztschr. 7:162, worker, type locality unknown but thought to have been Cuba) is definitely a species of *Brachymyrmex*, according to H. Bischoff, who recently examined the type. These circumstances led me to investigate thoroughly the intercepted *Plagiolepis* in order to determine its status, distribution, and recorded biology. I thought the ant might be *alluaudi* Emery, a species originally described from the Seychelles, or a closely related form. The type specimen of *alluaudi* was borrowed from the Museo Civico di Storia Naturale of Genoa, and the type of *foreli* Santschi from the Naturhistorisches Museum of Basel. Types of *augusti* Emery (*foreli* Mann not Santschi) are in the National Museum at Washington, D. C. Examination of the types of these three nominal species showed them to represent a single species, identical with the intercepted *Plagiolepis*, to which the name *alluaudi* should be applied. I am indebted to W. L. Brown for ascertaining that the type of *mactavishi* W. M. Wheeler, in the Museum of Comparative Zoology, Cambridge, Mass., is so nearly identical with *alluaudi* that the name *mactavishi* should be and is herewith

synonymized. I was not able to obtain types of *ornata* Santschi, but am synonymizing that species on the basis of the description alone.

For the kindness of loaning me types of the various nominal species I wish to thank the following: Delfa Guiglia of Genoa, Ed. Handschein of Basel, and Charles Ferriere of Geneva.

Below are listed references to *alluaudi* and its synonyms, with an indication of caste or castes from which described, type locality and type repository. Also cited are other helpful bibliographic references.

Plagiolepis alluaudi Emery

Plagiolepis alluaudi Emery, 1894. Soc. Ent. de France Ann. 63: 71, *worker*. (La Misere, Mahe, Seychelles; types in Museo Civico di Storia Naturale, Genoa, Italy.)

Plagiolepis mactavishi W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 166, *worker*. (Moorea, Tahiti, Society Islands; types in Museum of Comparative Zoology, Cambridge, Massachusetts.) *New syn.*

Plagiolepis foreli Santschi, 1920. Soc. Vaud. des Sci. Nat. Bul. 53: 165, figs. G. H. I, *worker*. (Botanical Garden, Zurich, Switzerland; types in Naturhistorisches Museum, Basel, Switzerland.)—Emery, 1921. Soc. Ent. de Belg. Ann. 61: 318 (as *alluaudi* var. *foreli*.) *New syn.*

Plagiolepis foreli var. *ornata* Santschi, 1920. Soc. Vaud. des Sci. Nat. Bul. 53: 166, *worker*. (New Caledonia; types in Naturhistorisches Museum, Basel, Switzerland.)—Emery, 1914. Nova Caledonia Zool. 1: 421 (misdet. as *exigua* var. *quadrinaculata* Forel.)—Emery, 1921. Soc. Ent. de Belg. Ann. 61: 318 (as *alluaudi* var. *ornata*.) *New syn.*

Plagiolepis foreli Mann, 1921. Harvard Univ., Mus. Compar. Zool. Bul. 64: 473, *worker*. (Suava, Viti Levu, Fiji Islands; types in the United States National Museum, Washington, D. C.) *Preocc. New syn.*

Plagiolepis augusti Emery, 1921. Soc. Ent. de Belg. Ann. 61: 317. *New name for foreli* Mann. *New syn.*

I offer here a redescription of the worker only, with emphasis on the more salient characters.

WORKER. Length: 1.25–1.33 mm.

Apex of scape very distinctly surpassing the posterior border of the head

(by at least the length of the first funicular segment); the second and third funicular segments extremely short, and distinctly broader than long; all other funicular segments longer than broad. Eye with 8 to 10 ommatidia in its greatest diameter. Thorax with a very distinct mesoepinotal constriction but the metanotal suture obsolescent. Clypeus with a group of approximately 6 rather long, anteriorly projecting hairs. A pair of short, suberect or erect hairs near the middle of the posterior border of the head (these not clearly seen unless the hairs are in profile; one or both of the hairs are sometimes missing, probably due to rubbing). Posterior border of each gastric segment with a transverse row of long, suberect to erect hairs dorsally, the hairs usually as long as, or longer than the space separating adjacent hairs. Pubescence on body rather sparse, closely appressed, best seen only in certain lights and positions. Color highly variable even in individuals from the same colony, ranging from an almost uniform light yellowish to rather dark brown; gaster commonly darker than the remainder of the body. Integument or body rather smooth and shining.

Evidence obtained from literature indicates that *alluaudi* is of Ethiopian origin and has been spread by commerce to various parts of the world. In Europe it has been found in hot houses or botanical gardens in England, Scotland, Ireland, Germany, and Switzerland. It has also been collected from many islands in the Indian and Pacific Oceans, especially those nearest Africa and Madagascar. Its presence on islands in the Pacific Ocean is presumably due to introduction. In addition to the Bermuda Islands, I have seen individuals from Catalina Island, California, collected by W. M. Mann, and from St. Lucia and St. Kitts in the British West Indies intercepted on plants by Plant Quarantine Inspectors of the U. S. Department of Agriculture. So far as I am aware, records from these four localities have not been previously published. More specific information on the distribution of *alluaudi* may be obtained in the following references: (as *alluaudi*) W. M. Wheeler, 1922, Amer. Mus. Nat. Hist. Bul. 45: 928, 1035; Donisthorpe, 1927, British Ants, p. 396, Geo. Routledge and Sons Ltd., London; (as *mactavishi*) W. M. Wheeler, 1935, Bernice P. Bishop Mus., Occas. Papers 11 (11): 38, and 1936, *op cit.*, 12 (18): 16; (as *ornata* and *augusti*) W. M. Wheeler, 1935, *op. cit.*

The following notes on the habits of *alluaudi* in Bermuda have been kindly supplied by I. W. Hughes. It is fairly definite that the species has been in Bermuda for at least 5 or 6 years, and although widely distributed it does not seem to be numerous anywhere. The species frequently nests under the bark of dead oleander limbs or in tunnels in this or other plants made by the

cerambycid *Leptostylus praemorsus* (F.). Some colonies are rather large and they may even be polydomus. The large size of many colonies can no doubt be attributed to the numerous egg-laying females. The largest colony observed was in a clump of oleander heavily infested with *Pulvinaria psidii* Maskell and containing much dead wood. The workers are rather inconspicuous on the plants and do not seem inclined to wander far from their nests. They apparently live on good terms with other ants, especially with *Pheidole megacephala* (F.). The workers are primarily sweet-eating and accustomed to tending honeydew-excreting insects, such as the green shield scale, *Coccus viridis* Green, *Pulvinaria psidii* and a species of the genus *Saissetia*. *P. alluaudi* is a household pest of some importance, commonly invading houses at night and seeking out sweets and fats. However, it is not as common or economically important in Bermuda as *Iridomyrmex humilis* Mayr and *Pheidole megacephala* (F.).

P. alluaudi may be the only species in Hawaii, although it has been recorded from there as both *mactavishi* W. M. Wheeler and *exigua* Forel. Philipps (1934. Univ. Hawaii Expt. Sta. of Pineapple Producers Coop. Assn. Ltd., Bul. 15: 54) states that the species is widely distributed there. He attributes its success to a short life cycle, tolerance of limits of temperature and humidity, and an ability to live in harmony with other ants, especially the more aggressive ones. In Hawaii as in Bermuda, workers commonly tend honeydew-excreting insects, but their importance in fostering or distributing these insects, particularly the pineapple mealybug, is not so clearly established as is that of some of the other ants. The ants are said to nest in houses, algaroba hollows, and pineapple stumps, and under stones and mulch. Ehrhorn (1931. Proc. Haw. Ent. Soc. 7: 393) found *alluaudi* in houses, especially after rains. He stated that this species and *Pheidole megacephala* entered electric conduits and destroyed the insulation. Krauss in a letter referred to *alluaudi* as a house-infesting ant in Hawaii with a fondness for sweets.

Plagiolepis alluaudi is admirably adapted for becoming widely distributed by commerce throughout the tropical and semitropical parts of the world. It would not be surprising to learn of its presence in many more localities than are now known. The fact that it is a tramp species also accounts for many of the synonyms.